**NC Forest Service**

**Forest Stewardship Plan Addendum**

**For Resource Required Resource Elements**

**Insert this sentence for the addendum purpose – overview or background**

The purpose of this document is meant to be used as a helpful template in order to address a tract’s natural resource elements and satisfy the *2015 National Forest Stewardship Program Standards and Guidelines*. The document states:

“*The plan preparer will consider, describe and evaluate resource elements present and their importance to the ownership. The extent to which management plans addresses these elements will depend upon their prevalence on the property and their importance with respect to the landowner’s primary objectives. The intent of this guidance is that all approved Forest Stewardship plans be multi-resource in scope and adequately comprehensive with respect to forest ecosystem management.*”

These resource elements, when present, must be addressed either in the Forest Stewardship Plan or a supporting appendix item such as this document. Plan writers should provide tract-specific information for each element that pertains to the property (see placeholder after each resource element’s standardized information that is provided). If a resource element is not present **and** not applicable to the tract, it should be stated, “Resource Element is not present and also not applicable.” Plan writers should feel free to edit and improve upon this document as they see fit. Sending the landowner an electronic copy of this document will enable them to more easily utilize the enclosed web-links.

**(Plan writers: select & delete this text box and the resulting empty spaces prior to sending plan to landowner)**

**Forest Stewardship Program Resource Elements**

*Version 2/24/2016 Updated links 3/6/2024*

The following sixteen (16) natural resource elements that should be addressed in all Forest Stewardship Management Plans when they are present and/or applicable to the landowner and the management of their property:

|  |  |
| --- | --- |
| 1. **Soil and Water** 2. **Biological Diversity (unique native plants, rare plants, or ecological communities)** 3. **Silvopasture** 4. **Agroforestry (Timber and Crop systems combined)** 5. **Aesthetic Quality (scenic quality and visually sensitive areas)** 6. **Recreation** 7. **Wood and Fiber production (Timber)** 8. **Fish and Wildlife (game and nongame, aquatic, fisheries)** 9. **Threatened and Endangered Species** | 1. **Forest Health and Invasive Species (insects, diseases, non-native plants, and disturbances)** 2. **Conservation-based Estate or Legacy planning information** 3. **Archeological, Cultural, and Historic Sites** 4. **Wetlands** 5. **Fire (fuel conditions and wildfire risk, prescribed burning)** 6. **Carbon Sequestration and Climate Resilience** 7. **Forests of Recognized Importance (FORI)\* (If Plan will be aligned with NC Tree Farm program)** |
|  |  |

This document provides information on the 16 required Forest Stewardship Program natural resource elements. Your Forest Stewardship Plan will likely contain additional details on these resource elements as they relate to your property and management objectives. Your plan may not address one or more of these resource elements if they were not observed on your property or was not identified as one of your management objectives. If you would like more information, contact your Forest Stewardship Program plan writer or local NC Forest Service (NCFS) office. Additional information and brochures may be available through your local NCFS and NC Cooperative Extension offices or at their web-sites: <http://www.ncforestservice.gov/publications.htm>

**Soil and Water**

Soil fertility is of major importance when it comes to forest management. Just as fertile soil is needed to produce high quality agricultural crops, specific soil conditions are required to grow good quality timber stands. Soil requirements vary by tree species. In forest silviculture, soil productivity is expressed as the “Site Index.” Site index (SI) is the measure of growth in a tree species on a particular soil over a 25 or 50-year period. All forestry activities must protect water quality and comply with, among others, the North Carolina Forest Practices Guidelines Related to Water Quality (FPGs). Refer to the following website on FPGs: [North Carolina Forest Practices Guidelines Related to Water Quality](http://ncforestservice.gov/publications/Forestry%20Leaflets/WQ01.pdf) . NCFS personnel can perform FPG site inspections upon request. Additionally, the state and some local governments have also established rules to protect vegetated riparian buffers found along streams, rivers, and reservoirs in various parts of North Carolina. Refer to the following website: [River Basin & Watershed Riparian Buffer Rules](http://ncforestservice.gov/water_quality/buffer_rules.htm)

Information on local soils and accompanying data can be found on the Natural Resources Conservation Service (NRCS) websites:

* [USDA Web Soil Survey Mapping Tool](http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm)

Your Forest Stewardship Plan should draw attention to water bodies located on your property that should be protected during forest management activities. This may include the establishment of streamside management zones (SMZs) which are meant to prevent sedimentation and maintain healthy water temperatures. Proper pre-harvest planning prior to cutting timber can help ensure protection of both soil and water resources. Information on forestry activities and water quality issues can be found on the NCFS website: [NCFS - Water Quality](http://ncforestservice.gov/water_quality/water_quality.htm)

**Soil and Water on Your Property:** Plan-writer inserts tract-specific comments here. If information has already been addressed in the body of the Forest Stewardship Plan, then state, “Refer to Stewardship plan for specific details. If a resource element is not present and not applicable to the tract, it should be stated, “Resource Element is not present and also not applicable.”

**Biological Diversity**

Biodiversity is the variety of life (including diversity of species, genetic diversity and diversity of ecosystems) and the processes that support it. Landowners can contribute to the conservationof biodiversity by providing a diversity of habitats. It is important to select management options that offer the greatest opportunities for promoting wildlife habitat and conserving biodiversity while fulfilling other land ownership objectives. Some of these options include, but are not limited to, conserving wildlife habitat and biodiversity by:

1. Managing stand-level habitat features.

2. Promoting *aquatic* and riparian areas.

3. Managing landscape features.

4. Conserving rare species and communities.

5. Protecting special features and sites.

6. Developing partnerships with natural resource agencies and conservation organizations.

For more information on managing for biological diversity on or near your property, refer to the following website:

[NC Biodiversity Resources](https://www.eenorthcarolina.org/resources/your-ecological-address/biodiversity)

**Biological Diversity on Your Property:** Plan-writer inserts tract-specific comments here. If information has already been addressed in the body of the Forest Stewardship Plan, then state, “Refer to Stewardship plan for specific details. If a resource element is not present and not applicable to the tract, it should be stated, “Resource Element is not present and also not applicable.”

**Silvopasture**

Silvopasture is the intentional integration of intensive livestock management and timber production on a common plot. By managing forage, trees, and livestock component on the same land unit, short and long term economic benefits can be realized. Silvopasture dates back to when humans first started burning and thinning forests to promote forage for the animals they relied on for food. The practice is increasingly popular in the South as a way to supplement timber income on small pine plantations and some hardwood stands. Trees can provide longer-term returns from sawlogs for lumber, while livestock in a rotational grazing system provides steady annual income. There can be, however, problems with combining the two management schemes if it is not done correctly.

[USDA - Top Ten Reasons Landowners Adopt Silvopasture Methods](http://www.srs.fs.usda.gov/compass/issue15/03top.html)

[USDA Working Trees Info - What Is Silvopasture?](https://www.fs.usda.gov/nac/assets/documents/workingtrees/infosheets/WhatIsSilvopastureInfoSheetMay2013.pdf)

**Silvopasture Opportunities on Your Property:**  Plan-writer inserts tract-specific comments here. If information has already been addressed in the body of the Forest Stewardship Plan, then state, “Refer to Stewardship plan for specific details. If a resource element is not present and not applicable to the tract, it should be stated, “Resource Element is not present and also not applicable.”

**Agroforestry**

Agroforestry is a method and system of land management involving the simultaneous cultivation of farm crops and trees; agriculture incorporating the growing of trees. Before any new Agroforestry system is established, landowners should thoroughly explore the associated economic and environmental considerations along with local land use, zoning, cost-share program, and tax regulations. Forest and agricultural land may have separate zoning and land-use regulations accompanied by different tax assessments. Environmental requirements (ex. planting trees, stream-side protection, and wildlife habitat maintenance) also may vary with land use.

More information on Agroforestry may be found at this website:

[USDA National Agroforestry Center](https://www.fs.usda.gov/nac/)

**Agroforestry Opportunities on Your Property:**  Plan-writer inserts tract-specific comments here. If information has already been addressed in the body of the Forest Stewardship Plan, then state, “Refer to Stewardship plan for specific details. If a resource element is not present and not applicable to the tract, it should be stated, “Resource Element is not present and also not applicable.”

**Aesthetic Quality**

Aesthetic quality means different things to different people. It can be anything from buffering a timber harvest from a busy road to managing for an open forest understory that is pleasing to walk through. There are numerous proven management techniques that may be employed to achieve the landowner’s desired level of aesthetic quality. Many of these techniques are discussed at the following websites:

[NCFS - Aesthetics Considerations for Forest Stewardship Plans](http://ncforestservice.gov/fsandfl/stewardship_aesthetics.htm)

<http://content.ces.ncsu.edu/catalog/category/16/forest-resources>

**Aesthetic Qualities on Your Property:**  Plan-writer inserts tract-specific comments here. If information has already been addressed in the body of the Forest Stewardship Plan, then state, “Refer to Stewardship plan for specific details. If a resource element is not present and not applicable to the tract, it should be stated, “Resource Element is not present and also not applicable.”

**Recreation**

Management practices which enhance recreation opportunities may be easy to implement depending on the types of forest-oriented recreational activities valued by the landowner. For tips on recreational management visit the following websites:

* [Woodland Trail Layout and Use](https://content.ces.ncsu.edu/static/publication/js/pdf_js/web/viewer.html?slug=recreational-forest-trails-plan-for-success);
* [Woodland Trails: Layout, Building and Maintenance](https://kywoodlandsmagazine.ca.uky.edu/sites/kywoodlandsmagazine.ca.uky.edu/files/entire_magazine_april_2009.pdf)
* [North Carolina Native Plant Society](http://www.ncwildflower.org/)
* [Hunting Opportunities](https://www.ncwildlife.org/hunting/hunting-in-north-carolina)

Visit the following website for information on pond management and fishing opportunities: <http://www.ces.ncsu.edu/nreos/wild/fisheries/mgt_guide/chapter1.html>

**Recreation Opportunities on your Property:** Plan-writer inserts tract-specific comments here. If information has already been addressed in the body of the Forest Stewardship Plan, then state, “Refer to Stewardship plan for specific details. If a resource element is not present and not applicable to the tract, it should be stated, “Resource Element is not present and also not applicable.”

**Wood and Fiber Production**

The Forest Stewardship Program assists landowners in sustainably managing their forest so they can be productive, vigorous and healthy. Your Forest Stewardship Plan will likely contain detailed information on timber management activities for your property. The type of management your forest stands will require is based on your management objectives as well as the relative age and current condition of the trees. The professional forester preparing your Forest Stewardship Plan will likely recommend practices designed to help establish a new forest stand (regeneration), tend the existing trees (intermediate stand management), or implement a harvest to utilize the mature trees and/or remove the current stand of undesirable trees to start a new stand.

**Wood and Fiber Production on your property:**  Plan-writer inserts tract-specific comments here. If information has already been addressed in the body of the Forest Stewardship Plan, then state, “Refer to Stewardship plan for specific details. If a resource element is not present and not applicable to the tract, it should be stated, “Resource Element is not present and also not applicable.”

**Fish and Wildlife**

Fish and other aquatic species depend on healthy water quality and quantity. The forest management choices you make have a direct impact on both of these. Proactive and positive things landowners can do include establishing streamside management zones (SMZs), preventing or mitigating sources of sedimentation, and leaving un-mown areas around ponds.

The [2015 Wildlife Action Plan](http://www.ncwildlife.org/plan#2423463-introductionbr-br-)  is a comprehensive planning tool developed by the NC Wildlife Resources Commission in cooperation with numerous partners, including federal and state agencies, conservation organizations and stakeholders to help conserve and enhance the state’s full array of fish and wildlife species and their habitats. Wildlife action plans outline the steps that are needed to conserve wildlife and their habitat before they become rare and more costly to protect. Wildlife action plans focus on the conservation of natural lands that provide clean water and habitats for wildlife. The plans describe many ways that we can educate the public and private landowners on the benefits for animals and people. Understanding relationships is the first step in determining how the landowner’s property can be managed to attract desirable wildlife species.

Landowners that have water bodies present on their property may contact various natural resource professionals to obtain technical assistance on improvement, aquatic maintenance, and fish stocking. An explanation of streamside management zones is located at: <http://www.ncforestservice.gov/publications/Forestry%20Leaflets/WQ04.pdf>

A reference to pond management can be found at: [Pond Management Guide](https://appliedecology.cals.ncsu.edu/extension/fisheries/pond-management-guide/)

Wildlife has four basic requirements: food, cover, water and space. Different wildlife species require different stages of forest growth to meet their needs. For example, quail and partridge feed on seeds of annual and perennial weeds and grasses that occur in young stands of timbers, where sunlight reaches the forest floor. This is early successional habitat. Pileated woodpeckers depend on dead and rotting trees found in mature forests. This is late successional habitat. While other wildlife prefer mid-successional habitat.

For more information on managing fish and wildlife on your forestland and ponds consider [Forest Stewardship Wildlife Contacts](http://ncforestservice.gov/fsandfl/stewardship_contacts.htm) and [Working With Wildlife.](https://content.ces.ncsu.edu/songbirds)

**Fish and Wildlife Habitat on Your Forest**: Plan-writer inserts tract-specific comments here. If information has already been addressed in the body of the Forest Stewardship Plan, then state, “Refer to Stewardship plan for specific details. If a resource element is not present and applicable to the tract, it should be stated, “Resource Element is not present and also not applicable.”

**Threatened and Endangered Species**

The North Carolina Natural Heritage Program provides information on state and federal threatened and endangered (T&E) plants and wildlife, habitats of particular conservation concern, and stewardship actions designed to benefit these important natural resources. A searchable database that can provide county-level and US Geological Survey (USGS) information is also available. The North Carolina Natural Heritage Program lists T&E species information at the following website: <https://ncnhde.natureserve.org/>

The USFW Service also has information regarding T&E species in North Carolina:

[USFW Service Listed Species Believed to or Known to Occur in North Carolina](https://ipac.ecosphere.fws.gov/)

**T& E Species on Your Property:** Plan-writer inserts tract-specific comments here. If information has already been addressed in the body of the Forest Stewardship Plan, then state, “Refer to Stewardship plan for specific details. If a resource element is not present and not applicable to the tract, it should be stated, “Resource Element is not present and also not applicable.”

**Forest Health and Invasive Species**

A healthy forest is a forest that possesses the ability to sustain the unique species composition and processes that exist within it. The health of our forests must be maintained to ensure the survival of plant and animal species that make the forest their home, and to protect those processes that maintain a healthy environment. A healthy forest must also be able to accommodate the present and future needs of people for a variety of values, products, and services. Forest health protection issues are often directly related to the active management of insects and diseases, invasive plants and wildfire. Yearly inspections for signs of insects, diseases or invasive plant infestations should be completed by the landowner.

[NCFS Forest Health Information](http://ncforestservice.gov/forest_health/forest_health.htm)

More forest health information can be found on the following websites:

[Forest Pests of North America](http://www.forestpests.org/)

Invasive Species information can be found on the following web site:

[University of Georgia Center for Invasive Species & Ecosystem Health](http://www.bugwood.org/)

**Forest Health and Invasive Species Considerations on Your Property:** Plan-writer inserts tract-specific comments here. If information has already been addressed in the body of the Forest Stewardship Plan, then state, “Refer to Stewardship plan for specific details. If a resource element is not present and not applicable to the tract, it should be stated, “Resource Element is not present and also not applicable.”

**Conservation-based Estate or Legacy Planning**

Owners of undeveloped property who want to see their land conserved have several options. Local land trusts are willing to work with landowners who want to protect it. Landowners can play a major role in how North Carolina will look in the future and how future generations will live by land conservation opportunities. By 2030, North Carolina’s population is expected to be 12 million in contrast to the present 9 million. Loss of rural land is inevitable as homes, offices and shops are built to accommodate this projected growth. Annually, North Carolina is losing 100,000 acres per year due to urban growth and development.

[Conservation Trust for North Carolina](http://www.ctnc.org/) and [North Carolina’s 23 Local Land Trusts](http://www.ctnc.org/north-carolina-local-land-trusts/find-local-land-trust/) work with landowners, communities and government agencies to save the places we love in North Carolina; streams, forests, farms, parks and scenic vistas. If landowners treasure their land and want it to remain largely as it is into the future, conservation may be a solution.

In addition to North Carolina’s land trusts, there are government programs that may assist in qualified landowner conservation efforts. The following programs may be of interest to some landowners: [North Carolina Forest Legacy Program](http://www.ncforestservice.gov/fsandfl/legacy_faq.htm#change); [North Carolina Land & Water Fund](http://www.cwmtf.net/#about.html); [North Carolina Agricultural Development and Farmland Preservation Trust Fund](http://www.ncadfp.org/)

Other conservation based resources: [Conserving Working Lands](http://agventures.ces.ncsu.edu/wp-content/uploads/2015/06/ConserveringWorkingLandsHandbookFinal-1.pdf?fwd=no); [Conservation Stewardship Program](http://sustainableagriculture.net/publications/grassrootsguide/conservation-environment/conservation-stewardship-program/); [The Nature Conservancy - Land Conservation](http://www.nature.org/ourinitiatives/urgentissues/land-conservation/index.htm)

**Estate or Legacy Planning for Your Property:** Plan-writer inserts tract-specific comments here. If information has already been addressed in the body of the Forest Stewardship Plan, then state, “Refer to Stewardship plan for specific details. If a resource element is not present and not applicable to the tract, it should be stated, “Resource Element is not present and also not applicable.”

**Archeological, Cultural and Historic Sites**

Cultural resources refers to landscapes, structures, archeological artifacts, and vegetation that represent a culture or society. These remains are pieces of history that can provide a glimpse into the technology, culture, and environment of earlier societies and reveal much about our country’s origins and development. Cultural resources can inform us about our evolving relationship with the natural world. If you have specific questions about such sites, it may also be possible to work with a trained expert from the North Carolina Cultural Resources staff. It is especially critical to understand where such sites may be located prior to conducting ground disturbing projects. Information concerning Archeological, Cultural and Historic sites can be found at these websites:

[North Carolina Cultural Resources](http://www.ncdcr.gov/)

A vast array of mapping resources can be found in this website from the NC Cultural Resources in the following web-link. Landowners may be able to identify the significance of the location of their property in proximity to historical occurrences

[NC Cultural Resources Mapping Tool](http://www.ncdcr.gov/node/219)

**Archeological Cultural and Historical Sites on Your Property:** Plan-writer inserts tract-specific comments here. If information has already been addressed in the body of the Forest Stewardship Plan, then state, “Refer to Stewardship plan for specific details. If a resource element is not present and not applicable to the tract, it should be stated, “Resource Element is not present and also not applicable.”

**Wetlands**

Wetlands are highly productive areas, whether it be in terms of timber production, water quality protection, wildlife habitat, etc. Due to their wet-natured soils and longer rotation hardwood stands, they are also sensitive ecosystems that need to be managed carefully. Some of the forestry activities done on “high ground” may still be carried out in wetland areas, but other practices may not. It is the responsibility of the landowner to understand the regulations related to forestry before engaging in forestry practices or contracting with a forest management service to work on their land. The NCFS; private consulting foresters; the NC Forestry Association; and the NC Forestry Extension Program can be good sources of information on allowable forestry practices in wetlands. The two primary agencies that regulate activities in wetlands are the NC Division of Water Quality and the US Corps of Engineers.

More information on North Carolina wetlands, as well as forestry activities that may be carried out in them, can be found at these websites:

[Managing Forests for Water](http://www.ncforestservice.gov/publications/WQ0115.pdf)

A series of Water Quality Forestry Leaflets dealing with timely forestry water quality topics can be found at this web-link:

[NCFS Water Quality Publications.](http://www.ncforestservice.gov/publications.htm#wq)

**Wetlands on your property:** Plan-writer inserts tract-specific comments here. If information has already been addressed in the body of the Forest Stewardship Plan, then state, “Refer to Stewardship plan for specific details. If a resource element is not present and not applicable to the tract, it should be stated, “Resource Element is not present and also not applicable.”

**Fire**

Prescribed fire is the planned use of fire under pre-determined weather and fuel conditions to obtain specific management objectives. This is also known as "controlled" burning, and when done correctly it mimics the frequent burning that used to occur in NC naturally. Prescribed burning is a critical management tool that benefits North Carolina's forests, wildlife and overall environment. It also helps reduce the devastating impacts of uncontrolled wildfire hazards. Prescribed fire is especially important in North Carolina due to the large amount of land lying in the [Wildland/Urban Interface](http://ncforestservice.gov/fire_control/fc_wui.htm) (WUI). The NC Forest Service and its partners train, plan and coordinate with local fire services and before a prescribed fire is started in order to ensure that all burning regulations are obeyed. There are also private contract burners that provide this service in various parts of the state. Additional information on prescribed burning may be found at:

[NCFS Fire Control and Prevention web-links](http://ncforestservice.gov/fire_control/fire_control.htm)

[Prescribed Burning Contractors](https://www.ncforestservice.gov/Managing_your_forest/contract_services.htm)

[The North Carolina Prescribed Fire Council brings together natural resource professionals, public and private land managers, and others who support the use of prescribed fire](http://www.ncprescribedfirecouncil.org/).

**Prescribed Fire Opportunities on Your Property:** Plan-writer inserts tract-specific comments here. If information has already been addressed in the body of the Forest Stewardship Plan, then state, “Refer to Stewardship plan for specific details. If a resource element is not present and not applicable to the tract, it should be stated, “Resource Element is not present and also not applicable.”

**Carbon Sequestration and Climate Resilience**

Climate change impacts to forests will be increasingly direct, through changing temperature, precipitation, and severe weather conditions, as well as indirect, through more intense stress, shifting disturbance patterns, and effects on pests and diseases. Maintaining healthy, resilient forests over time will require a clear appraisal of the risks and opportunities presented by climate change, including consideration of how local site conditions and management history might make a particular property more or less vulnerable to climate change impacts. Tools and resources are available to help foresters and landowners consider climate change information and develop management recommendations that will help adapt, or prepare forests for expected changes.

Ensuring that forests can adapt to climate change will also help ensure that forests continue to remove greenhouse gases from our atmosphere. Forests play a vital role in the earth’s carbon cycle, as they remove carbon from the atmosphere and store it in biomass (trunks, branches, foliage, and roots) and soils. Sustainable forestry practices can increase the ability of forests to sequester atmospheric carbon while enhancing other ecosystem services, such as improved soil and water quality. Harvesting and regenerating forests can also result in net carbon sequestration in wood products and new forest growth. More information and tools on climate change adaptation and carbon sequestration can be found on the following websites:

* USFS Climate Change Resource Center: [www.fs.usda.gov/ccrc/](http://www.fs.usda.gov/ccrc/)
* CCRC Forests and Carbon Storage Page: <https://www.fs.usda.gov/ccrc/topics/forest-management-carbon-benefits-introduction>
* Climate Change Response Framework: [www.forestadaptation.org](http://www.forestadaptation.org)
* Adaptation Workbook: [www.adaptationworkbook.org](http://www.adaptationworkbook.org)
* Template for Assessing Climate Change Impacts and Management Options:
* <https://manzanita.forestry.oregonstate.edu/taccimo/tbl_sector_list.php>
* Adapting to Climate Change: A short course for land managers: <https://www.fs.usda.gov/treesearch/pubs/34229>
* Adaptation Partners: <http://adaptationpartners.org/library.php>
* USDA Climate Hubs: <http://climatehubs.oce.usda.gov/>

**Carbon Sequestration and Climate Resilience on Your Forest:** Plan-writer inserts tract-specific comments here. If information has already been addressed in the body of the Forest Stewardship Plan, then state, “Refer to Stewardship plan for specific details. If a resource element is not present and not applicable to the tract, it should be stated, “Resource Element is not present and also not applicable.

**Forests of Recognized Importance (FORI)\***

**Forest of Recognized Importance (FORI)** is a term in [AFF’s 2021 Standards of Sustainability](https://www.treefarmsystem.org/view-standards) in Standard 5: Fish, Wildlife, Biodiversity and Forest Health. FORIs designation and represent globally, regionally and nationally significant large landscape areas of exceptional:

* ecological
* social
* cultural
* biological values.

These forests are evaluated at the landscape level, rather than the stand level and are recognized for a combination of unique values, rather than a single attribute. The American Tree Farm System’s [Forest of Recognized Importance](https://www.treefarmsystem.org/forest-of-recognized-importance--fori-) represent globally, regionally and nationally significant large landscape areas of exceptional ecological, social, cultural or biological values.

\*When Forest Stewardship Management Plans are desired to align with American Tree Farm Standards, FORI must be considered.

**Forests of Recognized Importance (FORI)\*** Plan-writer inserts tract-specific comments here. If information has already been addressed in the body of the Forest Stewardship Plan, then state, “Refer to Stewardship plan for specific details. If a resource element is not present and not applicable to the tract, it should be stated, “Resource Element is not present and also not applicable.